CASPER COLLEGE COURSE SYLLABUS

MATH 2205 Calculus II

Semester/Year: Fall 2015

Lecture Hours: 5 **Lab Hours:** 0 **Credit Hours:** 5

Class Time: 10:00-10:50am **Days:** MTWTHF **Room:** PS 119

Instructor's Name: Mark Kuhlman

Office: PS 130 **Office Phone:** 268-2369 **Email:** mkuhlman@caspercollege.edu

Office Hours: MWTHF 9:00-9:50 am and T 1:00-1:50 pm or by appointment or stop by my office because I'm usually there if I am not teaching. Also, if you want to set up an appointment please e-mail or leave me a voicemail. I am more than happy to help you.

Course Description: Completion of the calculus of single variable. This course will cover integrals of polynomial, trigonometric, exponential, and logarithmic functions. Theory includes applications of integration, methods of integration, introduction to elementary differential equations, and infinite sequences and series.

Statement of Prerequisites: MATH 2200, Calculus I with a C or better.

Goal: This course is a continuation of MATH 2200. The focus in this course is on the integral and its applications as well as an introduction to differential equations and series. At times you may also be using a computer algebra system throughout the course to help you model and analyze problem situations.

Outcomes:
1. Solve problems using critical thinking and creativity.
2. Use appropriate technology and information to conduct research.
3. Use quantitative analytical skills to evaluate and process numerical data.

Course Objectives: Students should:

1. Be able to apply the definition of the definite integral and understand the relationship between the definite integral and the concept of area.

2. Be able to analyze both definite and indefinite integrals numerically, graphically, and symbolically.

3. Be able to successfully apply integral calculus to at least five of the following applications: areas, volumes, average value, physics, economics or biological applications, improper integration, infinite series, parametric equations, polar coordinates.

4. Be able to use series to represent functions (Taylor, Maclaurin and Power series representations) and

be able to test for convergence of series.

5. Be able to use technology (both calculator and computer algebra systems) to analyze problems not easily done by hand.

Materials needed for the course:

Book: *Calculus Early Transcendentals –Briggs/Cochran :* ISBN 978-0-321-57056-7. We will cover Chapters 5-9.

Calculator: You will absolutely need a calculator for use in this course. A calculator with graphing and programmable capabilities is very useful and one that does symbolic calculations will be advantageous. Also, we may use a software program called MATHEMATICA, MAPLE and/or SAGE – so you need a way to store files (jump drive or cloud).

Methodology: The class will be a mix of lecture and inquiry based learning with some projects and computer labs. You are encouraged to participate in class. I hope you will ask questions and want to understand the material and not just get by on the test. Because there is so much information to cover this semester you may have to schedule a time to ask questions outside of class. Please see me with these questions to help you achieve success. Proficiency in mathematics requires practice! Consequently, homework assignments will be assigned daily. I will monitor your progress via quizzes, projects, and exams.

Electronics: Any device that makes noise (cell phones, MP3 players, tablets, etc) must be turned off and put away during class time (phones can be in silent/vibrate mode—if there is a serious reason for having it on). If you are using your phone during class you will be asked to leave. If it continues throughout the semester you will be dropped from the course.

Evaluation Criteria:

Exams (approx 70%): You are required to take exams at the scheduled hours. Under some pre-approved circumstances an exam may be taken early. In the event that an exam is missed, the final exam percentage will be the same percentage as the missed exam. A second missed exam is a zero. All exams and quizzes are cumulative. The comprehensive final exam is required.

Integral Skills Test (Gateway): You cannot pass the class without passing the Integral Skills Test with at least a 90% proficiency rating. You must pass this skills test before finals week. Integration is the main concept of Calculus II and carries over to Calculus III.

HW Quizzes/Mathematica Labs/Inquiry Based Projects (approx 30%): You will be assigned homework from the text. In addition, you should expect a couple of short in class quizzes each week.
No late work will be accepted and in general, quizzes, labs and projects cannot be made up.

Grading Procedure:	Probable Grade Scale:
Exams/Final Exam	
/Skills Test 70% of your grade	90 – 100 A
HW Quizzes/Projects 30% of your grade	80 – 89 B
	70 – 79 C
	60 – 69 D
	Below 60 F

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:

November 12th, 2015 will be the last day to drop this class without permission of the instructor. You will not be allowed to audit unless you attend class regularly for the whole semester. If you are thinking about changing your course status YOU MUST see me before this date!

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty - Cheating & Plagiarism: Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Calendar or schedule indicating course content:

Math 2205
Calculus II

TENTATIVE SCHEDULE FALL 2015

Week	Topics
Week 1	Calc. I Review 5.1 and 5.2 Approximating Area and the Definite Integral
Week 2	5.3 FTC 5.4 Working with Integrals
Week 3	5.5 Substitution Rule **Exam #1 (Chapter 5 Test)**
Week 4	7.1 and 7.2 Basic Approaches and Integration by Parts 7.3 Trigonometric Integrals
Week 5	7.4 Trig Substitutions 7.5 Partial Fractions 7.6 Other Integration Strategies
Week 6	7.7 Numerical Integration 7.8 Improper Integrals 7.9 Intro to Differential Equations
Week 7	Exam #2 (Chapter 7 Test) Integral Skills Test #1 (In Class) 6.1 Velocity and Net Change 6.2 Regions Between Curves

Week 8	6.3 Volume by Slicing 6.4 Volume by Shells 6.5 Length of Curves
Week 9	6.6 Surface Area 6.7 Physical Applications 6.8 Log and Exponential Functions Revisited
Week 10	6.9 Exponential Models Exam #3 (Chapter 6 Test) 8.1 An Overview of Sequences and Series
Week 11	8.2 Sequences 8.3 Infinite Series
Week 12	8.4 The Divergence and Integral Tests 8.5 The Ratio, Root, and Comparison Tests 8.6 Alternating Series
Week 13	Exam #4 (Chapter 8 Test) 9.1 Approximating Functions with Polynomials
Week 14	9.2 Properties of Power Series 9.3 Taylor Series
Week 15	9.4 Working with Taylor Series Exam #5 (Chapter 9 Test)
Week 16	Presentations Review for Final Exam
Final Exam Week	Comprehensive Final Exam--Time to be announced later